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# The Importance of the Louse Problem

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FIVE HUNDRED AND THIRTY-FIVE NORTH DEARBORN STREET  
CHICAGO



# The Importance of the Louse Problem



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## THE IMPORTANCE OF THE LOUSE PROBLEM \*

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The demobilization of armies is usually associated with the introduction of epidemic diseases into civil communities. There is great possibility of louse-borne diseases gaining entrance into the United States unless necessary measures are taken to exclude them. The question as to whether epidemic influenza could have been excluded from this country remains an open one; but it can be said with a certain degree of certainty, that with the application of proper measures, epidemic typhus fever, trench fever and relapsing fever can be excluded. In view of the fact that the louse has spread more disease in the present war than all the other insects combined, its importance as a disease carrier can be appreciated. It is important, therefore, that proper facilities be provided to delouse all returning troops, that the public health authorities provide measures for the delousing of immigrants, and that physicians be on the alert for the possible occurrence of louse-borne diseases, leading to the early isolation of those affected.

Vermin infestation is now prevalent throughout Europe, the annoyance of the "cootie" being well known to all American soldiers. Coincident with this widespread vermin infestation exists the impoverishment of most European peoples. These conditions usually precede a typhus fever epidemic. This fact is often related in the history of typhus fever. Epidemic typhus fever has already made its appearance in European countries, and with the advent of winter, when the disease is most common, we have much to fear from a general typhus fever epidemic. The

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\* From the Division of Sanitation, Medical Department, U. S. Army.

Allied troops are coming more and more in contact with the Russian and Balkan peoples, and the spread of this disease from army to army and then from country to country need be anticipated. For these reasons it is believed that due consideration should be given this problem, and proper measures be employed to exclude these diseases from the United States. It is important to point out that endemic typhus fever (Brill's disease) is a disease not uncommon in this country; and with the introduction of vermin, we may fear a greater number of cases and a possible increase in its virulence.

The eradication of vermin infestation calls for strict adherence to a certain definite plan of treatment. It has been said that vermin infestation in European armies started from a few infested individuals, and owing to the close association of the troops, the infestation rapidly spread. The escape of one vermin-infested individual into a community may cause considerable infestation. A vermin-infested man, then, should be regarded in the same light in which one regards a meningococcus carrier: he is a danger to the community until his condition is cleared up.

#### FUNDAMENTAL PRINCIPLES

In order that the best results may be obtained, there are certain fundamental principles regarding the subject of delousing that must be taken into consideration.

1. The clothes louse (*Pediculus humanus-corporis*) transmits typhus fever, trench fever and relapsing fever. These diseases are not transmitted by the bite of the louse but by a virus which is contained in the excreta. This virus gains entrance through the puncture wound made by the louse while sucking, or is scratched in by the infested individual. Therefore, a method which destroys only the lice and eggs without causing the destruction of the virus in the excreta is not sufficient. Delousing, then, should be defined as that process which destroys lice and their eggs and the virus concerned in the transmission of disease.

2. Various methods have been recommended for delousing, such as hydrocyanic acid gas, chloropicrin, and various insecticides and heat appliances. It is to be noted that the virus of relapsing fever is a spi-



rochette, while that of typhus fever is a bacillus. As these gases and insecticides are not bactericidal, they cannot be regarded as perfect delousing agents. In all instances in which heat is used, a high enough temperature must be employed to destroy the virus as well as lice and eggs. Steam has been found to be the best delousing agent.

3. All persons coming from a vermin-infested area should be regarded as if they were vermin infested. Examination for vermin in large bodies of men, even in the hands of experts, is of little value. A great deal of time is consumed in the examination, and the final result is of little use.

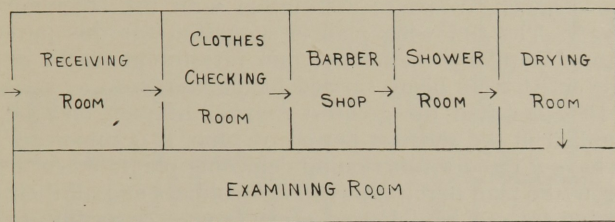


Fig. 1.—Scheme for delousing.

4. Clothes lice may lay their eggs on the hair of the head and of the axillary and pubic regions. This must be taken into consideration when treating this condition.

Clothes lice should be treated by sterilizing all clothing by exposure to steam under pressure for thirty minutes followed by ten minutes in a vacuum. The clothes then come out dry. If shrinkage of woolen materials result, the disinfector is not properly operated. Shrinkage of woolen materials is due to combined moisture and high temperature; therefore, if the moisture is kept at a minimum and the temperature at a point sufficient to sterilize, this will not occur. In no instance should leather material (such as shoes, puttees and hat) or rubber, celluloid material or money be sterilized. The occurrence of vermin in these materials is rare.

#### ARMY PLAN

The Army proposes to handle the problem in this manner: All troops will be detained at foreign ports for a period of two weeks, during which time persons



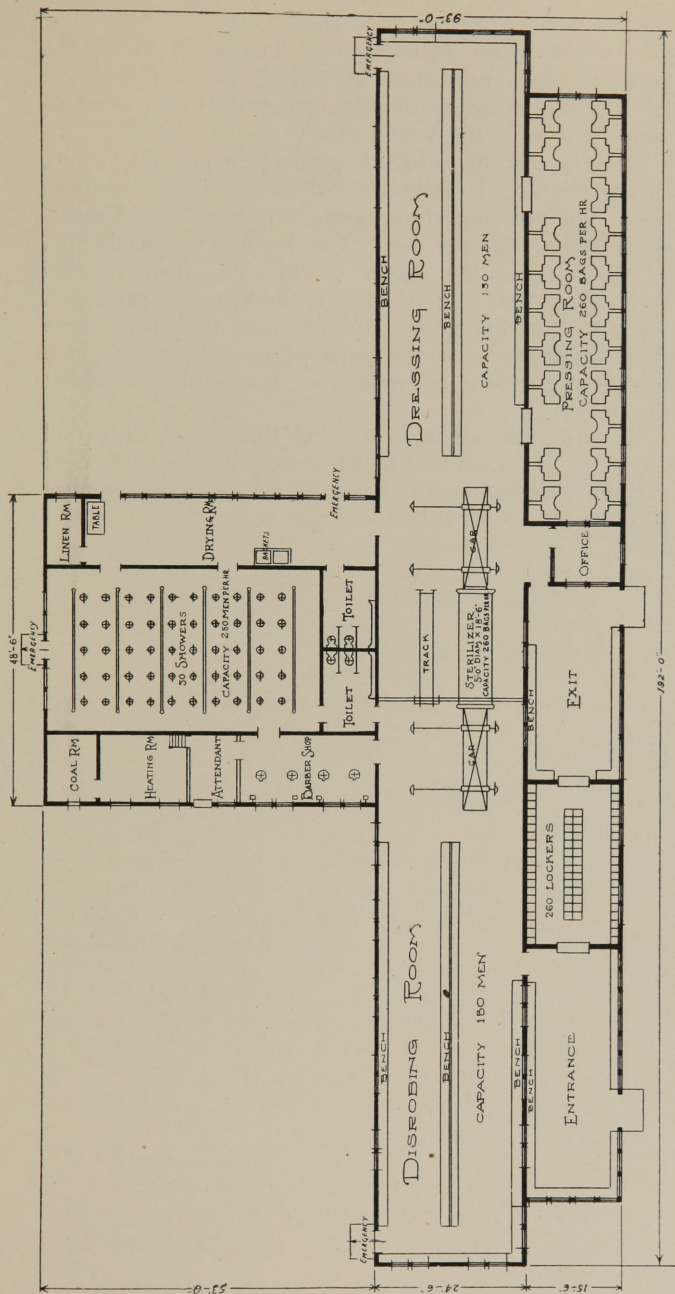
with infectious and epidemic diseases will be isolated and universal delousing will be practiced before embarking. Delousing will be practiced on transports when necessary. All soldiers on transports will be instructed to devote fifteen minutes each day to the search for vermin in their clothing. Universal delousing will be again practiced at debarkation camps in the United States. This will serve as a check on the first delousing.

#### AN EFFICIENT DELOUSING PLANT

All sick and wounded will be deloused at the debarkation hospital. An efficient method would be to have the delousing room in association with the receiving ward. The following plan is suggested for this purpose. With this method vermin infestation would be prevented from being carried to the wards.

In order that the greatest number of men may be handled in the shortest period of time, it is important to have a rapidly functioning delousing plant. According to the plan here proposed, 260 soldiers and all their equipment can be deloused every hour. According to this plan the man enters with his barrack bag containing all his clothing. The leather materials, rubber, celluloid materials and money are passed in at the locker room. The man receives two numbered tags corresponding to the number of the locker, and then proceeds to the disrobing room with his barrack bag. All his clothing is placed in the bag, which is tied and numbered with one of the tags, the man retaining the remaining tag. The bag is then placed in the carriage, which is pushed into the steam sterilizer. The sterilizer is 18½ feet long by 5 feet in diameter and is provided with two cars and transfer tracks, so that one car will be loading or unloading while the other is in the sterilizer.

The soldier then proceeds to the hair-cutting room. Before entering, he is inspected for vermin and nits. If vermin and nits are found in the hair of the head, axillary or pubic region, he is passed into the barber shop. If none are found, he passes into the shower room. In the barber shop the hair is cropped with an electric hair-cutting machine. The axillary and pubic hair can be shaved in this room. Following this he enters a shower room, where a bath with liquid soap



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Fig. 2.—Plan of debussing plant.

and warm water is obtained. The soap used is a kerosene soap mixture. A drying room follows, a table being provided for the clean towels and a receptacle to receive the soiled ones.

Provision is made in this plan for a pressing room, as the clothing is wrinkled following steam sterilization. The pressing of garments, however, would somewhat retard the process. The leather material, etc., is reclaimed at the locker room. The floor of this building is made of concrete. Two toilets are provided, one for the dirty men and one for the clean men. All attendants wear the louse-proof suit, which is a one-piece garment covering the shoes and tied about the neck.

With an arrangement such as this, when universal delousing is practiced, there should be no danger of vermin infestation or louse-borne diseases gaining entrance into the United States.





